ABSTRACT OF THE DISCLOSURE

Methods of generating laser pulses using a semiconductor laser diode as a lasing amplification medium of an extended laser cavity are presented. Passive self-modulated mode-locked operation of the semiconductor laser diode is achieved by providing an above lasing threshold direct current input current to the semiconductor laser diode while the semiconductor laser diode is operational in a slightly misaligned extended laser cavity favoring the amplification of wavelengths shorter than a center wavelength of a continuous wave operational mode of the semiconductor laser diode at threshold.